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ABSTRACT

The value of physical or corporal punishment is disputed among psychologists; most regard it as harmless, although a subgroup of researchers has controversially suggested that parental use of physical punishment may be causally related to the development of aggression. Thus, the psychological community appears to have separated into determined pro- and anti-physical punishment factions. An examination of the literature reveals that most studies are supportive of a relationship between physical punishment and aggression. Further, prospective studies suggest that physical punishment may contribute etiologically towards the development of aggressive behavior. It should be noted that age and gender differences appear very important, since the relationship may only be valid for school-age and older males. The association between physical punishment and aggression may be valid in the more extreme or frequent cases; low physical punishment may serve to either increase or decrease the incidence of aggression, while most studies suggest that moderate physical punishment does not increase aggression. However, the literature's conclusions are greatly limited by significant methodological flaws, notably control for factors such as child abuse, parental substance abuse, and other parenting behaviors. (BHK)

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Physical Punishment and The Development of Aggressive and Violent Behavior: A Review

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Abstract

The value of physical or corporal punishment is disputed among psychologists; most regard it as harmless, although a subgroup of researchers has controversially suggested that parental use of physical punishment may be causally related to the development of aggression. Thus, the psychological community appears to have separated into determined pro- and anti-physical punishment factions. What is lacking is a detailed critical review of the literature examining physical punishment and its causal relationship to aggressive or violent behavior.

An examination of the literature reveals that most studies are supportive of a relationship between physical punishment and aggression. Further, prospective studies suggest that physical punishment may contribute etiologically towards the development of aggressive behavior. It should be noted that age and gender differences appear very important, since the relationship may only be valid for school-age and older males. In addition, the association between physical punishment and aggression may only be valid in the more extreme or frequent cases; low physical punishment may serve to either increase or decrease the incidence of aggression, while most studies suggest that moderate physical punishment does not increase aggression. However, this literature's conclusions are greatly limited by significant methodological flaws, notably control for factors such as child abuse, parental substance abuse, and other parenting behaviors.

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A number of studies have sought to explain the development of aggressive behavior by examining childrearing practices in the histories of violent individuals. An important focus of this literature has been on children's exposure to parental physical aggression. Although very severe parental aggression is more often studied, some research has focused on milder parental aggression. Using mild aggression for the purposes of socialization (i.e., using physical punishment) is usually regarded as harmless, even among psychologists (Maurer, 1974; Leviton, 1976; Lowenstein, 1977). However, in the wake of several studies suggesting that *any* parental aggression may have important sequela, a subgroup of researchers has controversially concluded that parental use of physical punishment must be causally related to the development of aggression (e.g., Maurer, 1974; Steinmetz, 1979; Straus, 1991). Thus, the psychological community appears to have separated into determined

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pro- and anti-physical punishment factions (e.g., Keith-Spiegel, 1973; Feshbach, 1973; Lowenstein, 1977). What is lacking is a detailed critical review of the relevant literature, examining the evidence for either a simple or complex relationship between physical punishment and aggression. The purpose of this paper is to provide that review.

Typically, the most severe form of parental aggression (i.e., child abuse) is examined. Studies which seek to associate child abuse and the subsequent development of violent behavior have yielded results which strongly suggest that being exposed to abusive parental violence constitutes a significant risk factor for the development of violent behavior (Parke & Slaby, 1983; Widom, 1989). In contrast to this focus on only *extreme* forms of parental aggression, some researchers have evidenced interest in the cognitive and behavioral consequences of *any* use of physical aggression by the parents --- even the common, socially-sanctioned aggression which is usually referred to as "physical" or "corporal" punishment (these terms will be used interchangeably throughout this paper, as they are in the literature). Because such punishment differs significantly from child abuse in many ways, it is much less clear what its relationship to the development of violence might be. Further, the labelling of physical punishment as parental "violence" is a matter of controversy; however, few would dispute that it involves the use of at least mild physical aggression for the purpose of inflicting pain (Maurer, 1974). Therefore, an intriguing question is whether the use of physical or corporal punishment increases a child's probability of developing aggressive or violent behavior.

The purpose of this paper is to review the evidence for a causal relationship between physical punishment and the development of aggressive behavior. A separate, but related, issue is the mechanism by which parental physical punishment might cause aggressive behavior. For example, theorists have pointed out that modeling may be one mechanism whereby parental physical aggression (however mild) increases the likelihood of aggression in the child. Other relevant theories include attachment theory (Hirschi, 1969), lack of reinforcing childrearing techniques (Lefkowitz, Eron, Walder, & Huessmann, 1977), and many others. These theories and their accuracy or validity will not be reviewed here. Rather, the present paper will be confined to an investigation of the validity of the basic conclusion that parental use of physical punishment contributes etiologically to the development of aggressive behavior.

I. Incidence of physical punishment

Incidence estimates of physical punishment range greatly, depending on the nature of the assessment. One difficulty in estimating the incidence of physical punishment is discrepancies between referent periods (e.g., one year versus "ever"). When parents of older children are questioned about their use of physical punishment over short referent periods (e.g., over the previous month or year), the percent who admit using such discipline varies between 17% (DiLalla, Mitchell, Arthur, & Pagliocca, 1988), 57% (Lefkowitz, Walder, & Eron, 1963), and 71% (Pagliocca, 1988), 57% (Lefkowitz, Walder, & Eron, 1963), and 71% (Gelles, 1978). However, when adult individuals are questioned about

their own exposure to physical punishment over their entire childhood, much higher percentages are reported: for example, Deley (1988) found that 89% of his subjects reported that they had experienced physical punishment; similarly, 95% of Bryan and Freed's (1983) subjects recalled experiencing such punishment. Further, studies of toddlers almost always show rates of over 90% (e.g., Sears, Maccoby & Levin, 1957). Thus, it seems very likely that a vast majority of Americans are subjected to corporal punishment at one point or another during their lifetime.

The widespread nature of physical punishment has brought into question its relevance in the development of aggressive behavior. Almost all individuals are physically punished, yet only a fraction ever develop deviantly violent behavior. However, this fact does not, by itself, merit dismissal of physical punishment as a potentially important variable. To appreciate the potential contribution of variables such as physical punishment, it is important to distinguish between *necessary* and *sufficient* preconditions. There are many universal or nearly universal conditions which are necessary preconditions for the development of rare events. For example, although sexual intercourse is an almost universal behavior, it is associated with a rare event: cervical cancer. However, we know that the two are related *only under certain conditions* because nuns almost never contract cervical cancer, while prostitutes do so much more frequently (Skrabanek, 1988). Thus, the relationship between sexual intercourse and cervical cancer is a casual, but not a simple, relationship.

It is possible that the same type of causal, complex relationship exists between physical punishment and aggression and violence. It is certainly implausible that only a simple, one-on-one causal relationship could exist between any parental violence and the development of deviant violence (Curtis, 1963; Widom, 1989). In support of this, Miller and Challas (1981) assert that childhood violence experiences appear to be mediated by other developmental factors. (In fact, this was precisely what Widom (1989) found in the case of child abuse and aggression.) Therefore, it appears to be inappropriate to dismiss the study of theoretically important variables on the basis of a weak one-on-one relationship.

Among researchers interested in physical punishment, there has been, as noted above, some tendency to conclusively regard such punishment as causally related to the development of aggression (e.g., Glueck & Glueck, 1950; Yates, 1962; Eron, Walder, & Lefkowitz, 1970; Steinmetz, 1979). I will begin to examine the validity of this attitude by reviewing the nineteen studies (presented in Table 1) which address the association between parental use of physical punishment and aggressive behavior in the child. After a more general review, attention will turn to the quantitative strength of this association, taking into account the most pertinent methodological issues.

Insert Table 1 about here

II. The Relationship Between Physical Punishment and Aggression

A. Retrospective Research

Six studies have questioned individuals for their retrospective recall of physical punishment experiences during childhood. In a nationwide survey of 1,176 adult respondents, Owens and Straus (1975) found a significant positive correlation between the frequency of interpersonal violence received as a child and approval of the use of violence interpersonally. Their measure of violence received as a child merged physical punishment (e.g., spanking) and abusive violence (e.g., punching, choking). No direct measure of aggressive *behavior* was made.

The next five studies focused on self-reported aggressive behavior in adults. Bryan and Freed (1982) questioned 170 community college students about their history with physical punishment and their self-reported "problems with aggression." They found that students who reported having received a "high" amount of corporal punishment reported significantly more problems with aggression (among other difficulties).

The remaining four studies focusing on self-reported aggressive behavior and physical punishment have specifically examined family violence. Parke and Collmer (1975) found that abusive parents often had recollections of "physically punitive childhood experiences." The recollected violence was usually severe enough to be regarded as abuse, rather than as physical punishment. In 1977, Carroll studied 96 adults and found that 36.6% of those who had rated their childhood experiences as "high" physical punishment were violent, compared to only 14.5% of those who reported experiencing "low" physical punishment.

In a similar design, Caesar (1988) found that a sample of 26 wife batterers recalled more parental use of physical punishment than a sample of 18 nonviolent men (58% versus 31%). Finally, Gelles (1972) found that respondents who recalled being hit by their parents frequently (six or more times per year) were far more likely to physically fight with their spouse than were respondents who recalled being infrequently hit.

B. Cross-Sectional Research

Cross-sectional research designs have examined the co-existence of physical punishment and aggression in children. For example, Straus (1983) found, in a nationally representative sample of children (whose ages ranged from 3 to 17 years old), that 15% of children who were not physically punished "repeatedly and severely attacked a sibling," compared to 40% of children who were physically punished (but not abused), and 76% of children who were repeatedly abused.

1. Pre-School Age Children. Larzelere (1986) examined subjects drawn from Straus' (1983) sample, but conducted analyses separately by age group. In the age group three to six years old, Larzelere found a linear relationship between the frequency of spanking and the frequency of aggression towards

siblings and parents. Sears, Whiting, Nowlis, and Sears (1953) studied 40 three and four year olds and also found a linear relationship between physical punishment and aggression, but only for the boys in the sample. Becker, Peterson, Luria, Shoemaker, and Hellmer (1962) examined boys and girls separately and noted that physical punishment of girls was associated with aggression at home, while boys who were physically punished tended to behave aggressively in general.

2. School-Age Children. As he had for the younger children, Larzelere (1986) found a linear relationship between physical punishment and aggression among the seven- to twelve-year-olds in Straus' (1983) sample. In a similar age group (six to ten years old), Eron (1982) also found a linear relationship between peer-nominated aggression and use of physical punishment. He concluded that parents who punished their children physically had the most aggressive children. Lefkowitz, Walder and Eron (1963) studied eight-year-olds and found that children who were physically punished by their parents had higher mean aggression scores than children who were not physically punished.

3. Adolescent Children. Two studies examined the co-existence of physical punishment and aggression in older children (i.e., adolescents). Larzelere's (1986) thirteen- to seventeen-year-olds evidenced a linear relationship between the use of physical punishment and aggression towards siblings and parents. Welsh (1976) sampled 77 delinquents (mean age was 14-1; age range not given) and found that 97% of them reported either severe physical punishment (e.g., being hit with a belt) or abuse.

One study of adolescents, in contrast to all the studies reviewed above, noted a negative relationship. DiLalla, Mitchell, Arthur, and Pagliocca (1988) interviewed the families of 13 court-referred delinquents and found that the more aggressive the parental punishment (parent-reported), the less aggressive the offense of the delinquent. However, this study contains a weakness so significant that it may not merit inclusion in this literature: even the authors strongly questioned the validity of their measure of physical punishment, since interviewers represented the juvenile court system and parents thus almost universally failed to report any use of physical punishment.

To summarize, retrospective and cross-sectional studies have universally found that physical punishment and aggressive behavior are positively related. In the retrospective literature, violent individuals recalled more physical punishment than nonviolent individuals. Cross-sectional research noted that the use of physical punishment was found to correlate with co-existing childhood aggression in preschool, preadolescent, and adolescent children.

Retrospective and cross-sectional research cannot discern causal direction. Thus, the above literature suggests equally that physically-punished children become aggressive and that aggressive children are more often physically punished. In addition, cross-sectional research can only focus on childhood aggression, which cannot be equated with adult violence. Because of these limitations, a few studies have sought to prospectively examine the association between physical punishment and the later development

punishment. In contrast, the four quantitative studies offer mixed results. Two (Johannesson, 1977, and Sears, 1961) found no evidence for a relationship between physical punishment and aggression or attitudes towards aggression. Two others (Lefkowitz, Eron, Walder, & Huesmann, 1977; Singer, Singer, & Rapaczynski, 1984) found positive correlations between physical punishment and later aggressive behavior. These mixed results may be attributable to the different ages of the children assessed; Johannesson (1977) and Sears (1961) studied the physical punishment of younger children (aged 9 months to five years), while Lefkowitz, Eron, Walder, and Huessmann (1977) and Singer, Singer, and Rapaczynski (1984) studied six- and eight-year-olds. The physical punishment of older children is certainly more unusual and more deviant (Straus, 1983), and thus the positive results noted in these studies may be due to the detection of more deviant parental rearing practices in general (including, but not necessarily limited to, the use of physical punishment).

An alternative hypothesis for the difference noted is differential assessment of aggression. Singer, Singer, and Rapaczynski (1984) had the mothers report on their sons' aggression, and Lefkowitz, Eron, Walder, and Huesmann (1977) utilized a peers' rating of aggressive fighting in school. In contrast, Johannesson (1977) utilized a teacher's rating of aggression which included "quarreling"; therefore, children who demonstrated no physical aggression may have been included in the "aggressive" group. Similarly, Sears (1961) did not measure aggressive behavior at age 12, but rather, attitudes towards aggression. It appears that the studies which concentrated on *physically aggressive behavior* were those which noted significant and positive relationships.

D. Summary of Retrospective, Cross-Sectional, and Prospective Studies

All the cross-sectional and retrospective research reviewed above found a positive relationship between physical punishment and aggressive behavior. Correlations between physical punishment and aggression in the best-designed studies range from .21 to .32 (with stronger correlations for males). This literature supports the existence of an association between physical punishment and the development of aggression. Prospective research examined how well this association is maintained longitudinally, and suggested that when physically aggressive behavior is directly measured in older children (over five years old), corporal punishment may be included in the group of variables which potentially contribute to aggressive behavior.

One issue which limits all research in this area is the definitions used for "violence" and "aggression." Frequently, children are rated on a variety of aggressive acts, which are then summed to yield a total score. Children with low scores are compared with those at the high end of the scale (e.g., Larzelere, 1986); unfortunately, this method weakens the consistency between studies, since no standardized measures appear to be widely used. Further, raters of aggression range from peers (e.g., Lefkowitz, Walder, & Eron, 1963) to teachers (e.g., Sears, 1961), to parents (e.g., Straus, 1983). The rating of physical punishment appears to be more uniformly assessed via self-report on the part of parents (except, of course, in retrospective studies).

The remainder of this paper will be devoted to examining more specific findings and methodological issues in this literature. For example, is the nature of the positive relationship noted above linear or curvilinear? Can low correlations possibly be masking a curvilinear relationship? How do males and females compare when examining the association between physical punishment and aggression? And finally, what are the methodological issues which bring into question the strength of the conclusion that physical punishment may be causally related to the development of aggression and/or violence?

III. Methodological Issues

A. Linear Versus Curvilinear Relationships (Or: Does Completely Refraining from Physical Punishment Reduce the Incidence of Aggression?)

Eight studies utilized data analysis methods which would reveal either the existence of a linear or a curvilinear relationship between physical punishment and aggression. Four rejected the hypothesis of a curvilinear relationship, while supporting a linear relationship (Larzelere, 1986; Straus, 1983; Eron, 1982; Bryan & Freed, 1985). In contrast, Gelles (1972), Lefkowitz, Eron, Walder, and Huesmann (1977), and Sears (1961) found evidence for a curvilinear relationship; in these studies, "low punishment" children were *more* aggressive than children whose parents punished them moderately. (Nevertheless, severely-punished children remained the most aggressive group.) Lefkowitz, Walder, and Eron (1963) found yet another type of relationship: in their sample, severely-punished children were no more aggressive than moderately-punished children. Children who were not punished physically were less aggressive than any other group.

The major difference between studies finding linear versus curvilinear results appears to be the level of aggression attributed to the "low punishment" comparison group; in some studies, these children were more aggressive than moderately-punished children, but in other studies, they were less aggressive than moderately-punished children. This addresses an important question: does completely refraining from the use of physical punishment increase or decrease a child's level of aggression?

Central to this issue is the assessment of "low punishment" conditions. Unfortunately, the data reported (or not reported) in these studies makes it virtually impossible to address this issue. In some studies, the "low punishment" condition consisted of parents who literally used *no* physical punishment (e.g., Straus, 1983), while in other studies, the "low punishment" condition included parents who used some physical punishment (usually to an imprecise extent) (e.g., Bryan & Freed, 1982). Other studies do not report how they formed their comparison groups (e.g., Sears, 1961; Eron, 1982), while Lefkowitz, Walder, and Eron (1963) based their comparison groups on the number of types of physical punishments used, rather than on their frequency. These inconsistencies make it impossible to discuss the linear versus curvilinear issue without a great deal of speculation about unreported research methods; however, it seems clear that, depending upon the circumstances, refraining from using physical punishment may either increase or decrease the incidence of aggression.

of aggressive or violent behavior. We turn to this literature now.

C. Prospective Research

Six longitudinal studies have examined parental use of physical punishment and the development of aggressive or violent behavior. The first two of these studies are descriptions of clinical samples and the researchers' observations, involving no statistical analysis or systematic assessment procedures. Rigdon and Tapia (1977) reviewed the clinical histories of eighteen children who were referred to a mental health clinic because of violent behavior towards animals and found that "most" of the children who remained violent two to six years after the initial evaluation were the products of a "chaotic home situation with aggressive parents who administered harsh corporal punishment." Nagaraja (1984) followed 200 boys between the ages of 10 and 15 and reported that physical punishment "was found to increase the occurrence of the target behavior [aggression]."

Quantitative longitudinal studies have also been conducted, ranging from a span of three to ten years in length. The results from these studies have been more inconsistent. Singer, Singer, and Rapaczynski (1984) conducted a three-year longitudinal study of 55 children and found a statistically significant, positive correlation between "power-assertive child rearing" scores (i.e., child rearing which emphasizes "control and physical punishment") at age six and aggression at age nine years. Lefkowitz, Eron, Walder, and Huesmann (1977), in one of the best-designed studies in this area, followed 427 children over ten years (ages eight to eighteen). They questioned parents about any use of "spanking" or "slapping" as a punishment. Further, parents were rated on their use of other punitive punishments (e.g., withdrawing love), yielding a "punitive" score. Parents who scored among the lowest were termed "very permissive" and were presumed to have utilized positive reinforcement more frequently than punitiveness, although this was not assessed directly. Lefkowitz and his colleagues found that physical punishment at age eight was positively correlated with aggression at age eighteen, but only for boys. However, as Gelles (1972) had found, this relationship was in fact curvilinear: moderately-punitive parents produced the least aggressive boys (versus very permissive parents and very harsh parents).

Other prospective research has failed to find any relationship between physical punishment and later aggression. Sears (1961) followed 160 children over seven years but failed to find any significant relationship between physical punishment at age five and self-reported attitudes towards aggression at age twelve. Similarly, Johannesson studied 212 children and found no relationship between physical punishment at nine to 24 months of age and aggression at ages ten to twelve years. He found that nonaggressive children were "smacked" by their parents just as often as children who were rated as "aggressive" by their teachers.

In summary, then, four of the six prospective studies offer a quantitative design. The two qualitative studies of clinical populations found that most aggressive individuals had histories of parental physical

In addition, given the large percentage of the population which utilizes physical punishment, the possibility of any study locating a group of parents who literally utilize no physical punishment seems low. Although the number of these parents who deny using any physical punishment probably varies greatly given the length of the referent period, it is very plausible that parents often use mild physical punishment which they later fail to recall (e.g., slapping the hand of a toddler). In summary, therefore, it may be impossible to assess "no" parental use of physical punishment with complete accuracy; further, there must be other variables in the childhood of individuals whose parents largely refrain from using physical punishment which influence the development of aggression.

B. Child Abuse and Physical Punishment (Or: Does Only Moderate Physical Punishment Increase the Incidence of Aggression?)

The use of physical punishment appears to increase the likelihood that child abuse will occur (Maurer, 1974; Kosky, 1983). One result of this association is Sweden's 1979 civil law which forbids parental use of physical punishment (Feshbach, 1980). This association, taken together with the high incidence rate of child abuse measured in a representative sample (Straus & Gelles, 1990), makes it probable that child abusers were included among the parents studied in the physical punishment literature. Because child abuse is causally related to aggression (Widom, 1989), the effects of abuse (rather than physical punishment per se) may be responsible for the positive associations noted above. Thus, one potential weakness of this literature lies in its control for child abuse. When the presence of child abuse *is* controlled for, does the association between physical punishment and aggression remain significant? Does parental violence have to be extreme before it is associated with the development of deviant violence in the child?

Only two studies in this area address these questions by deliberately assessing for both child abuse and physical punishment. In one study of a clinical sample comparing wife batterers to non-batterers, Caesar (1988) questioned subjects about their exposure to parental violence in their families-of-origin. They assessed parental violence at three levels: (1) "spanking"; (2) "use of a switch, belt, razor strap, paddle, etc."; and (3) "beating." Batterers had experienced, relative to non-batterers, more parental violence at the second level. However, batterers and non-batterers did not differ in the proportion exposed to "spanking" or "beating." Whether the second level of violence here is considered to be abusive or not, spanking alone was not associated with wife-battering. However, this finding is of limited generalizability because, in a clinical sample, spanking may have been equally related to battering (in the index subjects) and to other psychological difficulties (evidenced by the controls).

In addressing this issue, the differential effects of child abuse and physical punishment have also been investigated in a nonclinical, nationally representative sample. Straus (1983) considered, cross-sectionally, a group of several thousand children ranging from three to 17 years of age. He interviewed their parents as part of the 1975 National Family Violence Survey, and assessed for both physical punishment (e.g., slapping, pushing) and child

abuse (e.g., hitting with a closed fist). He then compared the rates of aggression between children whose parents had *only* used physical punishment and children whose parents had used physical punishment *and* abusive violence. The results noted that aggression was much more common in abused children, when compared to physically punished children. Further, physically punished children (while not as aggressive as abused children), were much more aggressive than children whose parents used neither physical punishment nor abusive violence.

While only these two studies directly assessed for child abuse, other studies may have relevance because they assessed the frequency or severity of physical punishment, and typically compared "high", "moderate", and "low" physical punishment. When researchers do not report how subjects are classified, it is difficult to judge the meaning of these categories (Sears, 1961; Carroll, 1977; Eron, 1982). Other studies offer more information about the classification of their parents (Lefkowitz, Walder, & Eron, 1963; Gelles, 1972; Bryan & Freed, 1982; Larzelere, 1986). Although it nevertheless remains impossible in these latter studies to confidently equate "high physical punishment" with child abuse, enough information is provided in several cases to make it very plausible that such a group would contain more child abusers than a group of "low physical punishers." In any case, these four studies do provide information about the low and moderate use of physical punishment and its relationship to aggression.

Lefkowitz, Walder, and Eron (1963) compared mean aggression scores between children whose parents refrained from using physical punishment, children whose parents had only used physical punishment once annually, and children whose parents used physical punishment more frequently. He found that the crucial distinction in mean aggression lay between the "no physical punishment" children and the other children, implying that *any* (even very infrequent) use of physical punishment serves to increase aggression in children.

Other studies have implied the opposite: namely, that moderate punishment does not serve to increase aggression in children. Gelles (1972) compared children's aggression between parents who did not use physical punishment, those who used it less than six times a year, and those who used it on a daily to monthly basis. He found that the "low" punishment parents had reared the <u>least</u> aggressive children, even less aggressive than the "no" punishment parents (or the "high punishment" parents). Gelles' measure of physical punishment makes it unlikely that child abusers in the sample were placed in the "low" physical punishment category (although there is no way to be certain of this). Thus, his work implies that the use of physical punishment in the absence of abusive violence may not increase aggression at all; in fact, it may decrease aggression.

Bryan and Freed (1982) questioned college students about their own aggression and their recollection of their parents' aggression. They then divided the parent scores on both severity and frequency into "low", "medium", and "high" Corporal Punishment (CP) groups. Their "high" CP group had a much higher average rate of severe violence (e.g., strapping, whipping, punching, kicking, beating up, tying up) than the other two CP categories, making it

likely that this category represented the child abusers in the sample. Results noted that although the students exposed to "high CP" had more problems with aggression than the two other groups, the "medium" and "low" CP groups did not differ significantly from each other. Like Gelles' (1972) results, this study does not support the hypothesis that moderate or low physical punishment serves to increase aggressive behavior in children.

Larzelere's (1986) results also suggest support for this conclusion. He compared children's aggression based on the frequency with which their parents used spanking. He found that regardless of the age of the child, parents who spanked their children frequently (20 plus times a year) had children who were more aggressive with their siblings than did parents who spanked their children moderately (6 times a year) or parents who spanked their children minimally (once a year). Unfortunately, mean values were not reported to aid comparisons; but it appears (from the diagrammed results of the preschool subjects), that the significant difference lies between the very frequent spankers versus the moderate and minimal spankers. Moderate spanking did not appear to significantly elevate the risk of aggressive behavior.

In summary, then, six studies address the issue of moderate or low use of physical punishment versus child abuse by assessing for severity and/or frequency of use of parental aggression. Of these six, four found that moderate physical punishment was not associated with aggressive behavior. Two studies (Lefkowitz, Walder, & Eron, 1963, and Straus, 1983) noted that moderately-punished children were more aggressive than children not punished physically. However, all studies noted that severe physical punishment (in some cases probable child abuse) was associated with increased aggression. However, since none of these studies were prospective, none of them can comment of the direction of the association noted.

C. Males versus Females

Here, results are even more consistent. Five studies compared correlations between males and females; four of these found that the correlations for male subjects were stronger (Owens & Straus, 1975; Becker, Peterson, Luria, Shoemaker, and Hellmer, 1962; Eron, 1982; and Lefkowitz, Eron, Walder, and Huesmann, 1977). Correlations for females were generally not statistically significant, while for males they varied between .21 and .35 (and were statistically significant). Johannesson (1974) found no correlation between physical punishment and aggression for males; however, this is probably a reflection of his lack of findings in general. Like the other studies, he found no significant correlation for females.

D. Physical Punishment and Other Parenting Behaviors

Another issue which is important in evaluating the strength of the connection between physical punishment and the development of aggression is raised by Parke and Slaby (1983), who note that other adult characteristics may be associated with the use of physical punishment, and that it may be these behaviors which are responsible for associations noted (rather than the use of physical punishment per se). Research has implied that adults who

choose to use physical punishment may be different from adults who prefer other methods of punishment or behavior modification. For example, one study found that "close-mindedness" and "neuroticism" were highly correlated with the use of corporal punishment by public school teachers (Rust & Kinnard, 1983). Another study found that parental anger-proneness was related to the use of "harsh" parental punishment (Engfer & Schneewind, 1982). Becker, Peterson, Luria, Shoemaker, and Hellmer (1962) found that "hostile" parents tended to use more physical punishment than less hostile parents. Family factors have also been tentatively related to the use of corporal punishment; such factors include socioeconomic status (Magmer & Ipfling, 1973), cultural values (Escovar & Escovar, 1985), larger families (Wagner, Schubert, & Schubert, 1985), a high degree of intrafamilial conflict (Engfer & Schneewind, 1982), and marital satisfaction (Kemper & Reichler, 1976).

The relationship between personality and parenting factors and parental choice of punishment method must be very complex; these few studies can only be suggestive. Before we can definitively tease apart the impact of physical punishment from the impact of other parental and family factors, we must have a much clearer idea of what factors are most strongly associated with the use of physical punishment. Nevertheless, two of the studies on physical punishment and the development of aggression have attempted to control for other parenting and family factors. Although these can only be considered suggestive and by no means conclusive, they will be presented below.

One retrospective study (Carroll, 1977) investigated the interrelationship of parental "warmth", use of physical punishment, and the development of aggression. All subjects were questioned about their recall of their parents' warmth and nurturance using items from the Bronfenbrenner-Devereux Parental Activity Inventory. The subjects were then divided into four groups: low warmth/low punishment, low warmth/high punishment, high warmth/low punishment, and high warmth/high punishment. These four groups were then compared on their mean frequency of violent behavior, and, as predicted, the low warmth/high parental punishment families had the highest mean frequency. However, the only statistically significant effect was for parental warmth (high versus low); no other main or interactive effects achieved significance. Thus, although the data is in a direction which implies the importance of physical punishment above and beyond other parenting factors, statistically, it does not appear that physical punishment is related to aggression when parental warmth is accounted for.

Larzelere (1986) studied the interaction of physical punishment and parental use of discussion in his cross-sectional study. He found that, in younger children, parental discussion did not interact with physical punishment in the association with aggressive behavior. In older children, a different picture emerged. In preadolescents and adolescents, "the combination of frequent spanking and minimal discussion was particularly associated with frequent aggression"; in addition, when parents frequently used discussion, no association remained between use of physical punishment and spanking.

IV. Conclusion

In summary, then, most studies are supportive of a relationship between physical punishment and aggression. Further, when physical aggression is studied directly (not, for example, via attitudes towards aggression), this association appears to remain valid longitudinally, suggesting that physical punishment may contribute etiologically towards the development of aggressive behavior. It should be noted that age and gender differences appear very important, since the relationship may only be valid for school-age and older males. The nature of this positive relationship is far less clear. While several studies indicate that this association is probably of a linear, rather than a curvilinear, type, an equal number found evidence for a curvilinear association. In some cases, low physical punishment appeared to increase aggression, while in other cases it decreased aggression. Most studies of the moderate use of physical punishment indicated that it does not increase aggression, while severe physical punishment clearly does. Thus, the association between physical punishment and aggression may only be valid in the more extreme or frequent cases. Finally, the very few studies which examined other parenting characteristics in interaction with physical punishment suggest that high parental warmth or use of reasonable discussion may eliminate any noxious effects which occur as a result of the use of physical punishment.

All of these conclusions can only be termed tentative, because the literature of this area suffers from significant methodological problems. For example, the child development literature makes it clear that any study examining parental aggression must account for child abuse; however, only two studies directly assessed for this. Further, despite the noted relationship between alcohol and drug abuse and parental violence, no research has considered these factors when studying physical punishment. The issue of causality also requires further work. It would be best addressed by prospective research which begins at an early enough age to note, at Time One, the presence of physical punishment without any presence of aggressive behavior. Finally, such studies must examine the development of aggressive behavior in light of the full scope of parental violence *and* relevant family factors. Ambitious as such a project would be, it is necessary to ascertain any possible deleterious effects of a childrearing practice as widespread as physical punishment. Given the current literature, this hypothesized relationship seems to exist, but can hardly be termed conclusively true at this time.

Table 1.Studies examining the association between parental use of physical punishment and aggression in the offspring.

Author & Year:	Type of Study:	Number of Ss:
Sears (1961)	Prospective	160
Becker, Peterson, Luria, Shoemaker, & Hellmer (1962)	Retrospective	71
Lefkowitz, Walder, & Eron (1963)	Cross-Sectional	548
Gelles (1972)	Cross-Sectional	80
Johannesson (1974)	Prospective	212
Owens & Straus (1975)	Retrospective	1176
Parke & Collmer (1975)	Retrospective	-
Welsh (1976)	Cross-Sectional	77
Lefkowitz, Eron, Walder, & Huesmann (1977)	Prospective	427
Rigdon & Tapia (1977)	Prospective	13
Carroll (1977)	Retrospective	96
Eron (1982)	Cross-Sectional	591
Bryan & Freed (1982)	Retrospective	170
Straus (1983)	Cross-Sectional	2143
Singer, Singer, & Rapaczynski (1984)	Prospective	58
Nagaraja (1984)	Prospective	200
Larzelere (1986)	Cross-Sectional	1139
Caesar (1988)	Retrospective	44
DiLalla, Mitchell, Arthur, & Pagliocca (1988)	Cross-Sectional	18

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